

Karnes County, TX

GeoTech[®] fixed cutter drill bit with Tracker[®] gauge pad technology boosts drilling efficiency

Operator minimizes sliding, achieves 94% rotational drilling

CHALLENGE

- Perform directional drilling in challenging lateral section prone to sliding
- Downhole motor failure commonly encountered

SOLUTION

- 8-3/4 in. GTD64MOs GeoTech[®] fixed cutter drill bit equipped with the Tracker[®] gauge pad element to keep the bit on target with the ability to recess while sliding to achieve required build rates

RESULT

- Run to TD was achieved during operator's first use of this technology
- 94% of lateral footage was drilled rotating with only 6% sliding while drilling
- Operator rotated nine consecutive stands (\pm 720 ft.) providing significant time savings and increasing average ROP for the section
- Reduced costs associated with minimized run hours
- Eliminated costs associated with additional trips

Overview

When performing directional drilling operations, minimizing sliding and maximizing bit rate of penetration (ROP) is key. Operators must modify the bottom hole assembly (BHA), motor configurations, and downhole drill string components to help achieve the desired goal in various geologic conditions.

Challenge

Time spent sliding can be detrimental when drilling laterally in the Eagleford Shale. In addition to taking longer to reach total depth (TD), increased drilling duration means more time in the hot environment, increased potential for dysfunctional drilling, and added wear to motors. When a run fails to reach TD, it is commonly attributed to downhole motor failure. Maximizing rotation time is critical to help preserve motor integrity in challenging environments.

Solution

Halliburton recommended the 8-3/4 in. GTD64MOs GeoTech[®] fixed cutter drill bit equipped with the Tracker[®] gauge pad element to keep the bit on target with the ability to recess while sliding to achieve required build rates. The Tracker technology optimizes bit side cutting ability with the lateral forces applied by the BHA to articulate gauge pad elements, allowing for increased steerability in directional applications and increased stability when holding angle.



Result

The run to TD was achieved using the GeoTech drill bit and Tracker gauge pad technology. A total of 94% of lateral footage was drilled rotating with only 6% sliding while drilling. The operator rotated nine consecutive stands (± 720 ft.), significantly reducing time, and increasing average ROP for the section. As improved ROP helps prevent motor wear, it reduces the potential for additional trips to TD. The operator was able to minimize run hours and eliminate costs associated with additional trips.

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